

Speedy Delivery: Pacing Guide

The Pacing guide for each STEM Lab provides step-by-step instructions on What, How and When to teach. The Individual STEM Lab Pacing guide contains valuable information below:

- **Pacing** - Provides the approximate time duration of each section of the STEM Lab.
- **Concepts** - Lists the themes that surround the STEM Lab.
- **Delivery** - Provides guidance on teaching strategies for each STEM Lab section to improve student mastery of the content.
- **Materials** - Lists the materials that are essential to completing the STEM Lab.
- **Resources** - Provides the linked content and resources needed by the teacher to complete the lessons and activities.

| Section | Pacing | Concepts | Delivery | Materials | Resources |
|-------------|--|--|--|---|--|
| Seek | Building the Clawbot: 60 mins. <hr/> Exploration Discussion: 5 mins. <hr/> (Optional) What You'll Need to Know: | <ul style="list-style-type: none"> ● Building and Exploring the Clawbot ● Prerequisites: (Drive Forward and Reverse, Turning Right and Left) | Student Centered Cooperative Learning | <ul style="list-style-type: none"> ● 1 or more VEX IQ Super Kits ● Engineering Notebook | Build Instructions Build Rubric Collaboration Rubric Engineering Notebook Rubric (Individual Reflections) |

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| | 5 - 45 minutes | | | | |
| Play | <p>Range of Motion: 5 minutes</p> <hr/> <p>Programming a Sequence - VEXcode IQ: 40 mins.</p> | <ul style="list-style-type: none"> • Programming- (Programming the Claw, Programming the Robot Arm) • Programming Sequences of Robot Behavior • Range of Motion | <p>Teacher Direct Instruction</p> <p>Student Centered</p> | <ul style="list-style-type: none"> • Content Pages • VEX IQ Clawbot with Charged Battery • VEXcode IQ • Aluminum can or empty water bottle | |
| Apply | <p>Warehouse Robots: 5 mins.</p> <hr/> <p>Game Strategy: 5 mins.</p> | <ul style="list-style-type: none"> • Robots in the workplace • Robotic Precision • Project Planning | <p>Student Centered</p> <p>Cooperative Learning</p> | <ul style="list-style-type: none"> • Content Pages | |
| Rethink | <p>Prepare for the Package Dash Challenge: 30 mins.</p> <hr/> <p>Design, Develop, and Iterate on your</p> | <ul style="list-style-type: none"> • Pseudocode • Programming the Robot • Flexibility and Adaptability • Iteration on | <p>Student Centered</p> <p>Cooperative Learning</p> | <ul style="list-style-type: none"> • Content Pages • VEX IQ Clawbot with Charged Battery • VEXcode IQ • 1.22 x 2.44 m | <p>Pseudocode Rubric</p> <p>Programming Rubric</p> <p>Collaboration Rubric</p> <p>Engineering Notebook Rubric (Team</p> |

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| | <p>Project: 45 mins.</p> <hr/> <p>The Package Dash Challenge: 30 mins.</p> | <p>Improving a Project</p> | | <p>(4 x 8 feet), a VEX IQ Challenge Field, or open area</p> <ul style="list-style-type: none"> • Roll of tape • 3 aluminum cans • Stopwatch • Rulers or Yardsticks • Engineering Notebook | <p>Reflections</p> |
| <p>Know</p> | <p>Comprehension Questions: 5 mins</p> | <p>Summative Assessment</p> | <p>Student Centered</p> | <ul style="list-style-type: none"> • Multiple Choice Questions | <p>Know Questions</p> <p>Know Questions Answer Key</p> |